

WHAT IS CLAIMED IS:

1. An isolated polynucleotide comprising a nucleotide sequence containing the urogenital sinus-derived expressed sequence tag comprising ug092, ug093, ug096, ugl01, ugl02, 5 ugl06, ugl120, ug254, ug291, ug307, ug308, ug311, ug317, ug320, ug334, ug335, ug353, ug354, ug357, ug440, ug441, ug482, ug484, ug485, ug491, ug493, ug494, ug503, ug505, ug506, ugsl48, ugsl86, and ugsl94.
2. An isolated polynucleotide comprising a nucleotide sequence having a urogenital 10 sinus-derived expressed sequence tag sequence at least 95% identical to a sequence comprising ug092, ug093, ug096, ugl01, ugl02, ugl06, ug120, ug254, ug291, ug307, ug308, ug311, ug317, ug320, ug334, ug335, ug353, ug354, ug357, ug440, ug441, ug482, ug484, ug485, ug491, ug493, ug494, ug503, ug505, ug506, ugsl48, ugsl86, and ugsl94.
3. An isolated polynucleotide encoding a polypeptide wherein, except for at least 15 one conservative amino acid substitution, said polypeptide has an amino acid sequence that is identical to a urogenital sinus-derived express sequence tag comprising ug092, ug093, ug096, ugl01, ugl02, ugl06, ug120, ug254, ug291, ug307, ug308, ug311, ug317, ug320, ug334, ug335, ug353, ug354, ug357, ug440, ug441, ug482, ug484, ug485, ug491, ug493, ug494, ug503, 20 ug505, ug506, ugsl48, ugsl86, and ugsl94.
4. An isolated polynucleotide comprising a nucleotide sequence containing the urogenital sinus-derived expressed sequence tag comprising ug311.
5. An isolated polynucleotide of claim 1 which is DNA. 25
6. The isolated polynucleotide of claim 1 which is cDNA.
7. The isolated polynucleotide of claim 1 which is genomic DNA. 30
8. The isolated polynucleotide of claim 1 which is RNA.
9. The isolated polynucleotide of claim 1 which further comprises a detectable label.

10. A polynucleotide vector containing the polynucleotide of claim 1.

11. A polynucleotide expression vector containing the polynucleotide of claim 1 in
operative association with a nucleotide regulatory element that controls expression of the
5 polynucleotide in a host cell.

12. A cultured genetically engineered host cell containing the polynucleotide of
claim 1.

10 13. A cultured genetically engineered host cell containing the polynucleotide of
claim 1 in operative association with a nucleotide regulatory element that controls expression
of the polynucleotide in the host cell.

14. The genetically engineered host cell of claim 13 which is prokaryotic.

15 15. The genetically engineered host cell of claim 13 which is eukaryotic.

16. A method of producing a polypeptide urogenital sinus-derived gene product,
comprising the steps of:

20 (a) growing the genetically engineered host cell of claim 14 in a culture; and
(b) collecting the polypeptide gene product from the culture.

17. A method of producing a polypeptide urogenital sinus-derived gene product,
25 comprising the steps of:

(a) growing the genetically engineered host cell of claim 15 in a culture; and
(b) collecting the polypeptide gene product from the culture.

30 18. An isolated polypeptide comprising the amino acid sequence encoded by the
nucleotide sequence containing the urogenital sinus-derived expressed sequence tag comprising
ug092, ug093, ug096, ugl01, ugl02, ugl06, ug120, ug254, ug291, ug307, ug308, ug311, ug317,
ug320, ug334, ug335, ug353, ug354, ug357, ug440, ug441, ug482, ug484, ug485, ug491,
ug493, ug494, ug503, ug505, ug506, ugsl48, ugsl86, and ugsl94.

19. A fusion protein comprising the polypeptide of claim 16 operatively associated with a heterologous polypeptide.

20. An isolated polypeptide comprising a polypeptide having an amino acid sequence at least 95% identical to the amino acid sequence encoded by the nucleotide sequence containing the urogenital sinus-derived expressed sequence tag comprising ug092, ug093, ug096, ugl01, ugl02, ugl06, ug120, ug254, ug291, ug307, ug308, ug311, ug317, ug320, ug334, ug335, ug353, ug354, ug357, ug440, ug441, ug482, ug484, ug485, ug491, ug493, ug494, ug503, ug505, ug506, ugsl48, ugsl86, and ugsl94.

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21. A fusion protein comprising the polypeptide of claim 18 or 20 operatively associated with a heterologous polypeptide.

22. An isolated polypeptide comprising the amino acid sequence encoded by the nucleotide sequence containing the urogenital sinus-derived expressed sequence tag comprising ug311.

23. A pharmaceutical composition comprising

20 (a) An isolated polypeptide comprising the amino acid sequence encoded by the nucleotide sequence containing the urogenital sinus-derived expressed sequence tag comprising ug092, ug093, ug096, ugl01, ugl02, ugl06, ug120, ug254, ug291, ug307, ug308, ug311, ug317, ug320, ug334, ug335, ug353, ug354, ug357, ug440, ug441, ug482, ug484, ug485, ug491, ug493, ug494, ug503, ug505, ug506, ugsl48, ugsl86, and ugsl94;

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(b) pharmaceutically acceptable salts thereof; and a pharmaceutically acceptable carrier.

24. A pharmaceutical composition comprising

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(a) An isolated polypeptide comprising a polypeptide having an amino acid sequence at least 95% identical to the amino acid sequence encoded by the nucleotide sequence containing the urogenital sinus-derived expressed sequence tag comprising ug092, ug093, ug096, ugl01, ugl02, ugl06, ug120, ug254, ug291, ug307, ug308, ug311, ug317, ug320, ug334, 35 ug335, ug353, ug354, ug357, ug440, ug441, ug482, ug484, ug485, ug491, ug493, ug494, ug503, ug505, ug506, ugsl48, ugsl86, and ugsl94;

ug335, ug353, ug354, ug357, ug440, ug441, ug482, ug484, ug485, ug491, ug493, ug494, ug503, ug505, ug506, ugsl48, ugsl86, and ugsl94;

5 (b) pharmaceutically acceptable salts thereof; and a pharmaceutically acceptable carrier.

25. A method for diagnosing prostate disease, comprising assaying, in a patient sample, the expression of a polynucleotide containing the urogenital sinus-derived expressed sequence tag comprising ug092, ug093, ug096, ugl01, ugl02, ugl06, ug120, ug254, ug291, 10 ug307, ug308, ug311, ug317, ug320, ug334, ug335, ug353, ug354, ug357, ug440, ug441, ug482, ug484, ug485, ug491, ug493, ug494, ug503, ug505, ug506, ugsl48, ugsl86, and ugsl94

15 26. The method of claim 25 in which the expression of the polynucleotide is up-regulated.

27. The method of claim 25 in which the expression of the polynucleotide is down-regulated.

28. A method of monitoring the efficacy of a compound in clinical trials for the 20 treatment of prostate disease, comprising assaying, in a patient sample, the expression of a polynucleotide containing the urogenital sinus-derived expressed sequence tag comprising ug092, ug093, ug096, ugl01, ugl02, ugl06, ug120, ug254, ug291, ug307, ug308, ug311, ug317, ug320, ug334, ug335, ug353, ug354, ug357, ug440, ug441, ug482, ug484, ug485, ug491, ug493, ug494, ug503, ug505, ug506, ugsl48, ugsl86, and ugsl94

25 29. The method of claim 28 in which the expression of the polynucleotide is up-regulated.

30. The method of claim 28 in which the expression of the polynucleotide is down-regulated.

31. The method of claim 25 or 28 in which differential expression of the polynucleotide is assayed by:

35 (a) obtaining a sample of cells from a patient;

5 (b) assaying the expression of the polynucleotide in the sample of cells; and
(c) comparing the expression level of the polynucleotide in the patient sample to the expression level of the polynucleotide in a control sample of cells, in which a difference in the expression level of the polynucleotide in the patient sample and the control indicates differential expression of the polynucleotide.

10 32. A method for diagnosing prostate disease, comprising determining, in a patient sample, the presence of a mutation in a gene containing the urogenital sinus-derived expressed sequence tag comprising ug092, ug093, ug096, ugl01, ugl02, ugl06, ug120, ug254, ug291, ug307, ug308, ug311, ug317, ug320, ug334, ug335, ug353, ug354, ug357, ug440, ug441, ug482, ug484, ug485, ug491, ug493, ug494, ug503, ug505, ug506, ugsl48, ugsl86, and ugsl94.

15 33. The method of claim 32 in which the mutation of the gene is assayed by:
15 (a) obtaining a sample of cells from the patient;
(b) analyzing the structure of the gene in genomic DNA obtained from the sample of cells; and
(c) comparing the structure of the gene in the patient sample to the structure of the gene in a control sample of cells, in which a difference in the structure of the gene in the patient sample and the control indicates a mutation in the gene in the patient.

20 34. A method for identifying a substance for treating prostate disease comprising
20 assaying the ability of a test substance to modulate the expression of a gene containing the urogenital sinus-derived expressed sequence tag comprising ug092, ug093, ug096, ugl01, ugl02, ugl06, ug120, ug254, ug291, ug307, ug308, ug311, ug317, ug320, ug334, ug335, ug353, ug354, ug357, ug440, ug441, ug482, ug484, ug485, ug491, ug493, ug494, ug503, ug505, ug506, ugsl48, ugsl86, and ugsl94.

30 35. The method of claim 34 in which the prostate disease is prostatitis, benign or malignant growth of the prostate gland.

35 36. The method of claim 34 in which the modulation of the expression of said gene is assayed by:

5 (a) exposing a sample of cells to a test substance;
(b) assaying the expression of said gene in the sample of cells; and
(c) comparing the expression level of the gene in the sample exposed to the substance to the expression level of the gene in a control sample of cells, in which a difference between the expression level of the gene in the sample exposed to the substance and the control indicates the modulation of expression of the gene.

10 37. The method of claim 34 in which the gene is down-regulated by the test substance.

38. The method of claim 36 in which the substance is an oligonucleotide complementary to the 5' region of the gene and blocks transcription via triple helix formation.

15 39. The method of claim 38 in which the substance is an antisense or ribozyme molecule that blocks translation of the gene.

40. The method of claim 34 in which the gene is up-regulated by the test substance.

20 41. The method of claim 34 in which the substance is a small organic or inorganic molecule that modulates the activity of the protein product by binding to the protein product.

42. The method of claim 34 in which the substance is an antibody that modulates the activity of the protein product by binding to the protein product.

25 43. An assay for identifying a substance that binds to the protein encoded by a gene comprising:

30 (a) contacting a protein or peptide containing an amino acid sequence corresponding to the binding site of the protein encoded by a gene containing a urogenital sinus-derived expressed sequence tag comprising ug092, ug093, ug096, ug101, ug102, ug106, ug120, ug254, ug291, ug307, ug308, ug311, ug317, ug320, ug334, ug335, ug353, ug354, ug357, ug440, ug441, ug482, ug484, ug485, ug491, ug493, ug494, ug503, ug505, ug506, ugsl48, ugsl86, and ugsl94, with a test substance, under conditions and for a time sufficient to permit binding and formation of a complex between the protein or peptide and the test substance, and

(b) detecting the formation of a complex, in which the ability of the test substance to bind to the protein is indicated by the presence of the test substance in the complex.

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